

REMARKS

Applicants have amended their claims in order to further clarify the definition of the present invention. Specifically, claim 56 has been amended to correct the spelling of various forms of "saccharified", and to recite a "saccharifying" enzyme (rather than a "saccharogenic" enzyme). Various of the claims (claims 57, 59, 62, 63, 65 and 66) have been amended to be dependent on either claim 56 or claim 83 (claim 83 being a new claim and being discussed infra).

New claim 83 is an independent claim, and defines a method of producing liquor. The defined method includes liquefying and saccharifying a cereal using a filamentous fungus; fermenting resultant matter obtained in this liquefying and saccharifying, using yeast; separating liquid by filtering resulting matter from the fermenting; and conducting an oxidization reaction of resultant liquid obtained by separating the liquid by filtering, in the presence of oxygen. Note, for example, the first full paragraph on page 4 of Applicants' specification; see also the first full paragraph on page 15, particularly with the paragraph bridging pages 15 and 16, of Applicants' specification. Claims 84 and 85 have also been added to the application; dependent respectively on claims 83 and 56, these new claims further define the liquefying and saccharifying, consistent with the enzymes disclosed in the first full paragraph on page 15 of Applicants' specification.

Acknowledgement by the Examiner of Applicants' election of the Group IX claims, set forth in the first paragraph on page 2 of the Office Action mailed December 23, 2002, is noted. The non-elected claims are being retained in the above-identified application, subject to the filing of a Divisional application or

applications directed to the subject matter thereof.

Objection to claims 65 and 66 under 37 CFR § 1.75(c), as being in improper form, set forth in the second paragraph on page 2 of the Office Action mailed December 23, 2002, is noted. Dependencies of claims 65 and 66 have been amended, such that while each of claims 65 and 66 are maintained as multiple dependent claims, they are only dependent on single-dependent parent claims. In light of amendments to claims 65 and 66, it is respectfully submitted that the objection to claims 65 and 66 under 37 CFR § 1.75(c) is moot.

Applicants respectfully traverse the rejection of claims 56-64 under the first paragraph of 35 USC §112, as set forth in the fourth and fifth paragraphs on page 2 of the Office Action mailed December 23, 2002. Contrary to the conclusion by the Examiner, it is respectfully submitted that the terms "liquefying enzyme" and "saccharifying enzyme" (as presently amended) have definite meanings in the art, such that one of ordinary skill in the art would have known what was meant by such enzymes and would have been able to use such enzymes.

In this regard, attention is respectfully directed to the enclosed copy of the article by Lee, et al. "Fermentation of Corn and Wheat with Supplementation of Inactive Dry Brewer's Yeast", in the J. Am. Soc. Brew. Chem., 58(4), 2000, pages 155-159. Note particularly the paragraph bridging the right-hand column on page 155 and the left-hand column on page 156, using the terms "liquefying enzymes" and "saccharifying enzyme", and giving an example of each. As is clear therefrom, these enzymes are materials obtained from a manufacturer. This article shows that by use of the terms "liquefying enzymes" and "saccharifying enzyme" in

Applicants' specification, one of ordinary skill in the art would have known what was meant and would have known materials which could be used, such that one of ordinary skill in the art would have known how to make and use the present invention, including use of "liquefying enzymes" and "saccharifying enzymes".

Furthermore, attention is respectfully directed to the first full paragraph on page 15 of Applicants' specification, disclosing use of "liquefying enzymes", such as  $\alpha$ -amylase, and "saccharifying enzymes", such as glucoamylase. Clearly, Applicants provide guidance with respect to liquefying and saccharifying enzymes, including giving specific examples thereof, such that one of ordinary skill in the art would have known how to make and use the present invention, including use of such enzymes.

In this regard, attention is respectfully directed to new claims 84 and 85. Claims 84 and 85, dependent respectively on claims 83 and 56, respectively recites that the liquefying and saccharifying is performed using  $\alpha$ -amylase and glucoamylase; and recites that the liquefying enzyme is  $\alpha$ -amylase and the saccharifying enzyme is glucoamylase. Clearly, claims 84 and 85 are consistent with Applicants' specification, and Applicants' specification clearly discloses how to make and use the present invention as in claims 84 and 85, including specific enzymes used.

The contention by the Examiner that Applicants do not clearly teach amounts employed or conditions utilized, with respect to the liquefying and saccharifying enzymes, is respectfully traversed. Initially, it is noted that a proper test for satisfying the requirements of 35 USC §112, first paragraph, is whether one of ordinary skill in the art could make and use the present invention without undue

experimentation; even if some experimentation were required, such experimentation is permitted as long as it is not undue. The Examiner has not even alleged that undue experimentation would be required.

Moreover, as described at page 4, lines 2-5 of the specification of the above-identified application, a characteristic step for the present method is an oxidation reaction step of the liquid provided in the separation step, with such oxidation reaction being performed in the presence of oxygen. The oxidation reaction is described in detail, for example, at page 9, line 18 to page 10, line 27 of the specification of the above-identified application. It is respectfully submitted that the steps prior to the oxidation reaction (for example, steps (a)-(e) of claim 56) are steps to produce the liquid which is subjected to the oxidation reaction, and it is respectfully submitted that a person skilled in the art would have known the amount and processing conditions to use, e.g., in connection with use of the described enzymes, for obtaining the saccharified rice liquor. At the very least, clearly one of ordinary skill in the art, with guidance from the disclosure of the above-identified application, would know the amounts employed or conditions utilized, of the liquefying and saccharifying enzymes, such that the saccharified rice liquor could have been produced without undue experimentation.

In view of the foregoing comments and amendments, reconsideration and allowance of all claims presently being considered on the merits in the above-identified application are respectfully requested.

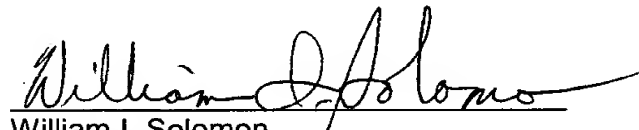
Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The changes are shown in the attachment captioned

"VERSION WITH MARKINGS TO SHOW CHANGES MADE".

To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in fees due in connection with the filing of this paper to the Deposit Account No. 01-2135 (Case No. 506.39933X00), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

  
William I. Solomon  
Registration No. 28,565

1300 North 17<sup>th</sup> Street  
Suite 1800  
Arlington, VA 22209  
Tel.: 703-312-6600  
Fax.: 703-312-6666

WIS/sjg

VERSION WITH MARKINGS TO SHOW CHANGES MADE

56. (Amended) A method of producing liquor, which comprises:

- (a) a step for preparing a [saccahrified] saccharified rice liquor, wherein a liquefying reaction is taken place by adding rice and liquefying enzyme to water in order to obtain a liquefied mixture, thereafter a [saccahrifying] saccharifying reaction is taken place by adding [saccharogenic] saccharifying enzyme to the resultant liquefied mixture in order to obtain a [saccahrified] saccharified rice liquor;
- (b) a first fermentation step for adding rice *koji* and yeast to water and fermenting thereof;
- (c) a second fermentation step for adding rice *koji* and the [saccahrified] saccharified rice liquor obtained from the step (a) to the resultant mixture of the first fermentation step and fermenting thereof;
- (d) a third fermentation step for adding the [saccahrified] saccharified rice liquor obtained from the step (a) to the resultant mixture of the second fermentation step;
- (e) a separation step for separating liquid by filtering the resultant mixture of the third fermentation step; and
- (f) an oxidation reaction step for conducting an oxidation reaction of the resultant liquid of the separation step in the presence of oxygen.

57. (Amended) The method according to claim 56 or 83, wherein the oxidation reaction is carried out under irradiation with light.

59. (Amended) The method according to claim 56 or 83, wherein the oxidation reaction is carried out by aeration or blowing oxygen into the reaction system.

62. (Amended) The method according to claim 56 or 83, wherein the yeast is ferulic acid decarboxylase activity.

63. (Amended) The method according to [any of claims 56 to 62] claim 56 or 83, wherein the oxidation reaction is carried out in the presence of an enzyme which accelerates the oxidation reaction.

65. (Amended) The method according to [any of claims 56 to 62] claim 56 or 83, wherein said liquor is a cooking liquor.

66. (Amended) The method according to [any of claims 56 to 62] claim 56 or 83, wherein said liquor is *sake*.